

Table S2 - NYCOMPS AUC

Gene Structure	Solubilization Detergent	NYCOMPS Abbreviation	All					C-terminal Cytoplasmic (Predicted)				
			Count	Positive Count	AUC	Lower bound 95% CI	Upper bound 95% CI	C-terminal Perioplasmic (Predicted)				
								Count	Positive Count	AUC	Lower bound 95% CI	Upper bound 95% CI
	Gene Outcomes (Only positive)	8444	934	67.1	65.2	68.9	5680	693	66.3	64.2	68.5	
							2764	241	67.6	64.0	71.2	
	Gene Outcomes (At least 1 positive)		2097	59.7	58.3	61.1	5680	1528	58.9	57.3	60.6	
							2764	569	59.9	57.3	62.6	
	All Expression Trials		17114	2686	62.6	61.5	63.8	11435	1966	62.1	60.8	63.5
5679		720						62.7	60.5	64.8		
His-FLAG-TEV-	DDM	N	7730	1344	63.2	61.6	64.8	5072	991	62.2	60.2	64.1
								2658	353	63.9	60.8	67.1
-TEV-His	DDM	C	3409	524	63.6	61.1	66.1	2534	405	64.5	61.6	67.3
								875	119	60.3	54.9	65.6
-TEV-His	LDAO	C_LDAO	763	128	59.2	54.0	64.4	532	99	58.7	52.5	64.8
								231	29	59.3	49.3	69.3
His-GST-TEV-	DDM	MSGC.24	383	31	69.0	60.1	77.8	226	21	67.2	55.3	79.0
								157	10	72.2	59.8	84.6
-TEV-His	DDM	MSGC.28	1810	178	55.6	51.1	60.1	1117	129	55.4	50.0	60.8
								693	49	54.0	45.5	62.5
His-TEV-	DDM	MSGC.7	2125	316	58.6	55.4	61.8	1381	216	58.5	54.6	62.3
								744	100	58.6	52.9	64.2
His-MBP-TEV-	DDM	MSGC.9	511	93	67.9	62.4	73.4	347	61	64.4	57.5	71.3
								164	32	74.9	66.4	83.3
His-MBP-TEV-	LDAO	MSGC.9_LDAO	383	72	70.8	64.0	77.6	226	44	65.2	55.9	74.4
								157	28	79.1	69.8	88.4